

WHAT IS CLAIMED IS:

1. An image forming apparatus, comprising:
 - a transfer section for transferring the toner image
 - 5 formed on an image carrier onto a recording material;
 - a transfer voltage applying section for applying a voltage to said transfer section;
 - a transfer current detector for detecting the transfer current flowing through said transfer section;
 - 10 a fixing section for fixing said toner image transferred onto said recording material by said transfer section to fixing position at a predetermined temperature; and
 - a size detector for detecting the size of said recording material;
 - 15 wherein said transfer voltage applying section applies a predetermined transfer voltage, while said recording material passes through said transfer section, so that said transfer current detected by said transfer current detector is kept a predetermined constant current;
 - 20 when said predetermined transfer voltage is lower than a threshold voltage and the size of said recording material is larger than the predetermined size, said fixing section fixes said toner image at a temperature which is lower than said predetermined temperature.

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2. The image forming apparatus as claimed in claim 1, wherein said transfer voltage applying section applies

said predetermined transfer voltage to said transfer section before the front end of said recording material has passed said fixing position.

5 3. The image forming apparatus as claimed in claim 1, wherein said transfer voltage applying section applies a constant transfer voltage to said transfer section after said recording material has passed said transfer section until the lapse of a predetermined time.

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4. The image forming apparatus as claimed in claim 1, wherein said transfer voltage applying section applies a first transfer voltage before said recording material passes through said transfer section so that said transfer
15 current detected by said transfer current detector is kept a first constant current,

said transfer voltage applying section applies a second transfer voltage, while said recording material passes through said transfer section, so that said transfer
20 current detected by said transfer current detector is kept a second constant current,

when said first transfer voltage is lower than a first threshold voltage, said second transfer voltage is lower than a second threshold voltage and the size of said
25 recording material is larger than the predetermined size, said fixing section fixes said toner image at a temperature which is lower than said predetermined temperature.

5. The image forming apparatus as claimed in claim 1 further comprising:

a memory for storing a temperature which said fixing
5 section fixes said toner image upon completion of the image formation; and

a lapse of time detector for detecting the lapse of the time from the completion of the image formation;

wherein, if said lapse time detected by said lapse of
10 time detector is lower than a predetermined time upon starting the image formation, said fixing section fixes said toner image at a temperature which is stored in said memory.

15 6. The image forming apparatus as claimed in claim 1, wherein, when said predetermined transfer voltage is lower than a threshold voltage and the size of said recording material is larger than the predetermined size, said fixing
section fixes said toner image for a recording material
20 conveyed following said recording material which the size is detected by said size detector at a temperature which is lower than said predetermined temperature.

7. The image forming apparatus as claimed in claim 1,
25 wherein said size detector detects the size of said recording material by detecting the front end and the rear end of said recording material.

8. The image forming apparatus as claimed in claim 1,
wherein said size detector detects the width of the
recording material orthogonal to the direction of the
5 transfer thereof.

9. An image forming apparatus, comprising:
a transfer section for transferring the toner image
formed on an image carrier onto a recording material;
10 a transfer voltage applying section for applying a
voltage to said transfer section;
a transfer current detector for detecting the transfer
current flowing through said transfer section;
a fixing section for fixing said toner image transferred
15 onto said recording material by said transfer section to
fixing position at a predetermined temperature;
a size detector for detecting the size of said recording
material; and
a signal receiver for receiving the image data
20 transmitted to the image forming apparatus from an external
apparatus;
wherein said transfer voltage applying section applies
a predetermined transfer voltage, while said recording
material passes through said transfer section, so that
25 said transfer current detected by said transfer current
detector is kept a predetermined constant current;
when said predetermined transfer voltage is lower than

a threshold voltage based on said size of said recording material and a print rate of said image data received by said signal receiver, said fixing section fixes said toner image at a temperature which is lower than said
5 predetermined temperature.

10. The image forming apparatus as claimed in claim 9, wherein said transfer voltage applying section applies said predetermined transfer voltage to said transfer
10 section before the front end of said recording material has passed said fixing position.

11. The image forming apparatus as claimed in claim 9, wherein said transfer voltage applying section applies
15 a constant transfer voltage to said transfer section after said recording material has passed said transfer section until the lapse of a predetermined time.

12. The image forming apparatus as claimed in claim
20 9,

wherein said transfer voltage applying section applies a first transfer voltage before said recording material passes through said transfer section so that said transfer current detected by said transfer current detector is kept
25 a first constant current,

said transfer voltage applying section applies a second transfer voltage, while said recording material passes

through said transfer section, so that said transfer current detected by said transfer current detector is kept a second constant current,

when said first transfer voltage is lower than a first threshold voltage and said second transfer voltage is lower than a second threshold voltage based on said size and said print rate, said fixing section fixes said toner image at a temperature which is lower than said predetermined temperature.

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13. The image forming apparatus as claimed in claim 9 further comprising:

a memory for storing a temperature which said fixing section fixes said toner image upon completion of the image formation; and

a lapse of time detector for detecting the lapse of the time from the completion of the image formation;

wherein, if said lapse time detected by said lapse of time detector is lower than a predetermined time upon starting the image formation, said fixing section fixes said toner image at a temperature which is stored in said memory.

14. The image forming apparatus as claimed in claim 9, wherein, when said predetermined transfer voltage is lower than a threshold voltage a threshold voltage based on said size of said recording material and a print rate

of said image data received by said signal receiver, said fixing section fixes said toner image for a recording material conveyed following said recording material which the size is detected by said size detector at a temperature
5 which is lower than said predetermined temperature.

15. An image forming apparatus, comprising:
- a transfer section for transferring the toner image formed on an image carrier onto a recording material;
 - 10 a transfer voltage applying section for applying a voltage to said transfer section;
 - a transfer current detector for detecting the transfer current flowing through said transfer section;
 - a fixing section for fixing said toner image transferred
15 onto said recording material by said transfer section to fixing position at a predetermined temperature;
 - a size detector for detecting the size of said recording material; and
 - a signal receiver for receiving the image data
20 transmitted to the image forming apparatus from an external apparatus;
- wherein said transfer voltage applying section applies a predetermined transfer voltage, while said recording material passes through said transfer section, so that
25 said transfer current detected by said transfer current detector is kept a predetermined constant current;
- when said predetermined transfer voltage is larger than

a threshold voltage based on said size of said recording material and a print rate of said image data received by said signal receiver, said fixing section fixes said toner image at a temperature which is larger than said
5 predetermined temperature.

16. The image forming apparatus as claimed in claim 15, wherein said transfer voltage applying section applies said predetermined transfer voltage to said transfer
10 section before the front end of said recording material has passed said fixing position.

17. The image forming apparatus as claimed in claim 15, wherein said transfer voltage applying section applies
15 a constant transfer voltage to said transfer section after said recording material has passed said transfer section until the lapse of a predetermined time.

18. The image forming apparatus as claimed in claim
20 15,

wherein said transfer voltage applying section applies a first transfer voltage before said recording material passes through said transfer section so that said transfer current detected by said transfer current detector is kept
25 a first constant current,

said transfer voltage applying section applies a second transfer voltage, while said recording material passes

through said transfer section, so that said transfer current detected by said transfer current detector is kept a second constant current,

when said first transfer voltage is larger than a first
5 threshold voltage and said second transfer voltage is larger than a second threshold voltage based on said size and said print rate, said fixing section fixes said toner image at a temperature which is larger than said predetermined temperature.

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19. The image forming apparatus as claimed in claim
15 further comprising:

a memory for storing a temperature which said fixing section fixes said toner image upon completion of the image
15 formation; and

a lapse of time detector for detecting the lapse of the time from the completion of the image formation;

wherein, if said lapse time detected by said lapse of time detector is lower than a predetermined time upon
20 starting the image formation, said fixing section fixes said toner image at a temperature which is stored in said memory.

20. The image forming apparatus as claimed in claim
25 15, wherein, when said predetermined transfer voltage is larger than a threshold voltage a threshold voltage based on said size of said recording material and a print rate

of said image data received by said signal receiver, said fixing section fixes said toner image for a recording material conveyed following said recording material which the size is detected by said size detector at a temperature
5 which is larger than said predetermined temperature.

21. An image forming apparatus, comprising:

a transfer section for transferring the toner image formed on an image carrier onto a recording material;

10 a transfer voltage applying section for applying a voltage to said transfer section;

a transfer current detector for detecting the transfer current flowing through said transfer section;

a fixing section for fixing said toner image transferred
15 onto said recording material by said transfer section to fixing position at a predetermined temperature; and

a size detector for detecting the size of said recording material;

wherein said transfer current detector detects a
20 transfer current when said transfer voltage applying section applies a predetermined transfer voltage, while said recording material passes through said transfer section;

when said transfer current is larger than a threshold
25 current and the size of said recording material is larger than the predetermined size, said fixing section fixes said toner image at a temperature which is lower than said

predetermined temperature.

22. An image forming apparatus, comprising:

a transfer section for transferring the toner image
5 formed on an image carrier onto a recording material;

a transfer voltage applying section for applying a
voltage to said transfer section;

a transfer current detector for detecting the transfer
current flowing through said transfer section;

10 a fixing section for fixing said toner image transferred
onto said recording material by said transfer section to
fixing position at a predetermined temperature;

a size detector for detecting the size of said recording
material; and

15 a signal receiver for receiving the image data
transmitted to the image forming apparatus from an external
apparatus;

wherein said transfer current detector detects a
transfer current when said transfer voltage applying
20 section applies a predetermined transfer voltage, while
said recording material passes through said transfer
section;

when said transfer current is larger than a threshold
current based on said size of said recording material and
25 a print rate of said image data received by said signal
receiver, said fixing section fixes said toner image at
a temperature which is lower than said predetermined

temperature.

23. An image forming apparatus, comprising:

a transfer section for transferring the toner image
5 formed on an image carrier onto a recording material;

a transfer voltage applying section for applying a
voltage to said transfer section;

a transfer current detector for detecting the transfer
current flowing through said transfer section;

10 a fixing section for fixing said toner image transferred
onto said recording material by said transfer section to
fixing position at a predetermined temperature;

a size detector for detecting the size of said recording
material; and

15 a signal receiver for receiving the image data
transmitted to the image forming apparatus from an external
apparatus;

wherein said transfer current detector detects a
transfer current when said transfer voltage applying
20 section applies a predetermined transfer voltage, while
said recording material passes through said transfer
section;

when said transfer current is lower than a threshold
current based on said size of said recording material and
25 a print rate of said image data received by said signal
receiver, said fixing section fixes said toner image at
a temperature which is larger than said predetermined

temperature.